

**Title: Global analysis of ocean surface fluxes of heat and freshwater:
satellite products, NWP analyses, and CMIP simulations**

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Abstract

The project hypothesis is that careful analysis and blending of global satellite and NWP surface flux products, that are intercompared and evaluated against existing surface observations, can be used to provide useful forcing for ocean models and a meaningful evaluation of coupled climate model simulations. This product-driven NEWS proposal will:

- Evaluate the accuracy, precision, and uncertainty associated with surface fluxes and their input variables for available satellite data sets and NWP reanalyses for 1999, using the assembled SEAFUX in situ data base
- Assemble a new “best” blended surface flux product by selecting the best values of radiation fluxes and precipitation and the best input variable products for surface turbulent fluxes that are then combined using a new bulk aerodynamic flux model improved for high wind conditions
- Evaluate the blended flux data set in the context of basin net heat and freshwater fluxes and the implied meridional transports.
- Use the blended flux data set (combining satellite and NWP products) to force regional ocean models and to evaluate the U.S. CMEP model runs (NCAR, GISS, GFDL), and evaluate the individual models regionally given the uncertainties in the evaluation data.
- Produce a ~20 year blended flux data set for the period beginning with 1987.
- Develop recommendations for regions and weather conditions where enhanced observations and process studies are needed to improve determination of surface fluxes.